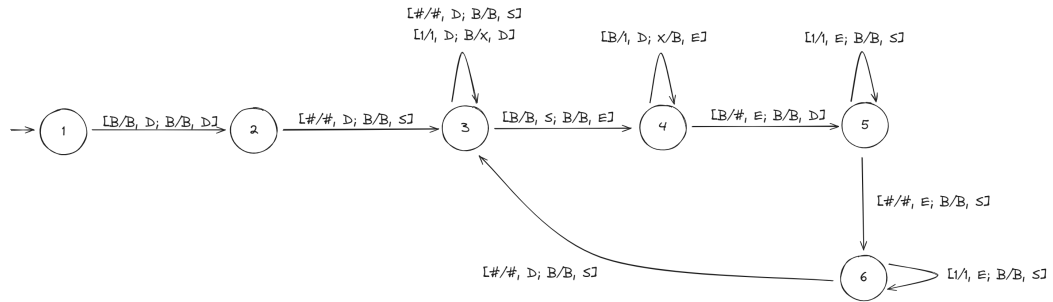
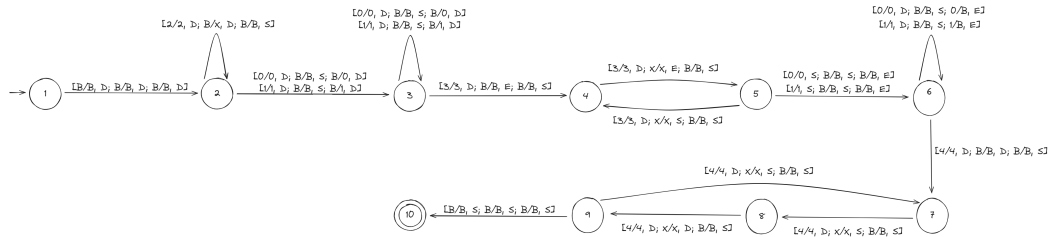


1



2

A)



B)

$M = (\{1, 2, 3, 4, 5, 6, 7, 8, 9\}, \{0, 1, 2, 3, 4\}, \{0, 1, 2, 3, 4, B\}, \delta, 1, \{10\})$, onde:

$$\delta(1, B, B, B) = [2; B, D; B, D; B, D]$$

$$\delta(2, 2, B, B) = [2; 2, D; X, D; B, S]$$

$$\delta(2, 0, B, B) = [3; 0, D; B, S; 0, D]$$

$$\delta(2, 1, B, B) = [3; 1, D; B, S; 1, D]$$

$$\delta(3, 0, B, B) = [3; 0, D; B, S; 0, D]$$

$$\delta(3, 1, B, B) = [3; A, D; B, S; 1, D]$$

$$\delta(3, 3, B, B) = [4; 3, D; B, E; B, S]$$

$$\delta(4, 3, X, B) = [5; 3, D; X, E; B, S]$$

$$\delta(5, 3, X, B) = [5; 3, D; X, S; B, S]$$

$$\delta(5, 0, B, B) = [6; 0, S; B, S; B, E]$$

$$\delta(5, 1, B, B) = [6; 1, S; B, S; B, E]$$

$$\delta(6, 0, B, 0) = [6; 0, D; B, S; B, E]$$

$$\delta(6, 1, B, 1) = [6; 1, D; B, S; B, E]$$

$$\delta(6, 4, B, B) = [7; 4, D; B, D; B, S]$$

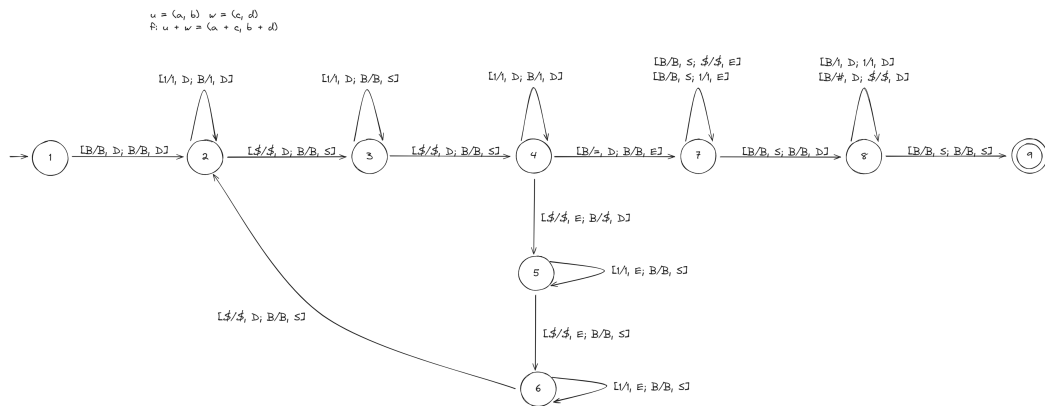
$$\delta(7, 4, X, B) = [8; 4, D; X, S; B, S]$$

$$\delta(8, 4, X, B) = [8; 4, D; X, D; B, S]$$

$$\delta(9, 4, X, B) = [7; 4, D; X, S; B, S]$$

$$\delta(9, B, B, B) = [10; B, S; B, S; B, S]$$

3



4

A)

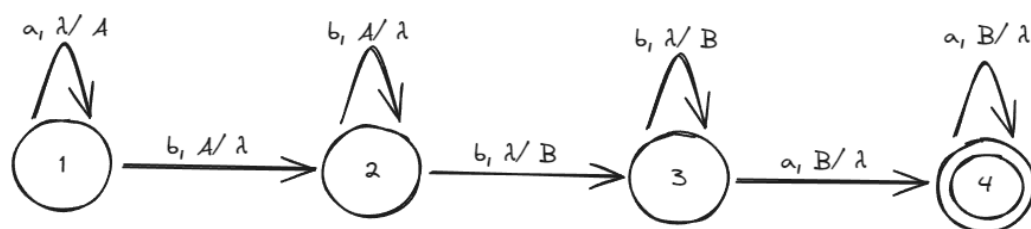
$G = (\{Z, A, B\}, \{a, ba\}, P, Z)$, onde:

$P = \{z \rightarrow AB\}$

$A \rightarrow aAb \mid ab$

$B \rightarrow bBa \mid ba$

B)



C)

$M = (\{1, 2, 3, 4\}, \{a, b\}, \{A, B\}, \delta, 1, \{3\})$, onde:

$\delta(1, a, \lambda) = [1, A]$

$\delta(1, b, A) = [2, \lambda]$

$\delta(2, b, A) = [2, \lambda]$

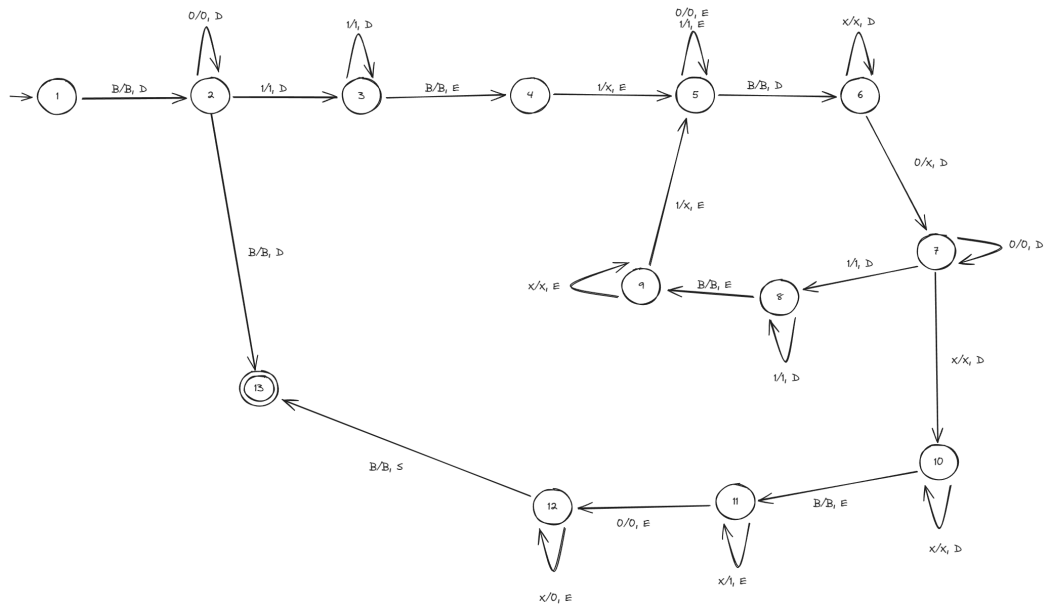
$\delta(2, b, \lambda) = [3, B]$

$\delta(3, b, \lambda) = [3, B]$

$\delta(3, a, B) = [4, \lambda]$

$\delta(4, a, B) = [3, \lambda]$

5



6

